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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,723	02/25/2002	Nigel D. Young	GB010051	8250

24737 7590 06/04/2003

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EXAMINER	
MANDALA, VICTOR A	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/084,723	Applicant(s) YOUNG, NIGEL D.	
	Examiner Victor A Mandala Jr.	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendments

1. The Applicant has amended the claims to distinctly claim the subject matter that was noted by the examiner in Paper No. 10 to be indefinite. The 35 U.S.C. 112 rejection is retracted based upon the Applicant's amendment in Paper No. 12.

2. The Applicant argues that the 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,323,832 Nishizawa et al. is invalid due to the fact that the prior art does not teach between the semiconductor elements and the pixel electrodes within the display, where the pixel electrodes are in the flexible or second areas of the substrate. The examiner has considered the Applicant's arguments and finds them to be non-persuasive. The 35 U.S.C. 102(e) stands as is. The revised rejection with the newly added matter can be found below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 8-11, & 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,323,832 Nishizawa et al.

3. Referring to claim 1, a flexible matrix array device comprising: a thin film matrix circuit carried on the surface of a flexible substrate, (Figure 3b #3), which matrix circuit, (Figure 1), includes semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), arranged in a regular array and occupying respective first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3), and pixel electrodes, (Figure 1 #2), correspondingly coupled to each of the semiconductor devices, (Figure 1 & 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), and occupying respective second areas, (Figure 3b examiner's label #10), of the substrate, (Figure 3b #3); wherein the substrate, (Figure 3b #3), is configured such that flexing of the substrate, (Figure 3b #3), occurs more readily at the second areas, (Figure 3b examiner's label #10), than at the first areas, (Figure 3b examiner's label #11).

4. Referring to claim 2, A curved matrix array device comprising a thin film matrix circuit, carried on the surface of a substrate, (Figure 3b #3), which matrix circuit, (Figure 1), includes semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), arranged in a regular array and occupying respective first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3), and pixel electrodes, (Figure 1 #2), correspondingly coupled to each of the semiconductor devices, (Figure 1 & 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), and occupying respective second areas, (Figure 3b examiner's label #10), of the substrate, (Figure 3b #3); wherein the substrate, (Figure 3b #3), is configured such that curvature of the device is accommodated substantially by deformation at the substrate, (Figure 3b #3), at the second areas, (Figure 3b examiner's label #10).

5. Referring to claim 3, a flexible matrix array device, wherein the second areas, (Figure 3b Examiner's label #10), comprise locally thinner regions of the substrate, (Figure 3b #3).

6. Referring to claim 6, a flexible matrix array device, wherein the second areas, (Figure 3b Examiner's label #10), comprise areas of the substrate, (Figure 3b #3), at which the material of the substrate, (Figure 3b #3), is rendered less stiff compared with the first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3).

7. Referring to claim 8, a flexible matrix array device, wherein the second areas, (Figure 3b examiner's label #10), include lines that facilitate flexing of the substrate, (Figure 3b #3), between the first areas, (Figure 3b examiner's label #11), of the substrate, (Figure 3b #3).

8. Referring to claim 9, a flexible matrix array device, wherein the semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32), are arranged in an array of rows and columns, (Figure 1), and wherein the second areas, (Figure 3b Examiner's label #10), comprise lines that facilitate flexing of the substrate, (Figure 3b #3), extended across the array, (Figure 1), between rows and/ or columns of semiconductor devices, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

9. Referring to claim 10, a flexible matrix array device, wherein the first areas, (Figure 3b examiner's label #11), are thicker than the second areas, (Figure 3b examiner's label #10), of substrate, (Figure 3b #3).

10. Referring to claim 11, a flexible matrix array device, wherein the semiconductor devices each comprise a semiconductor film formed into an island, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

11. Referring to claim 13, a flexible matrix array device, wherein the device comprises an active matrix display devices, (Figure 1), having an array of display pixels, (Figure 3b # 1a, 2a, 3a, & 4a Col. 2 Lines 24-32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4 & 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,323,832 Nishizawa et al.

12. Referring to claim 4, a flexible matrix array device, wherein the locally thinner regions are formed by selective etching of the substrate.

Initially, and with respect to claim4, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113

13. Referring to claim 5, a flexible matrix array device, wherein the substrate comprises a laminated structure with at least two layers and in which one layer is patterned to form the locally thinner regions.

Initially, it is noted that the 35 U.S.C. § 103 rejection based on a substrate with one layer laminated to another layer that is patterned in which makes a substrate with thinner regions, which deals with an issue (i.e., the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece) that has been previously decided by the courts.

In Howard v. Detroit Stove Works 150 U.S. 164 (1893), the Court held, "it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together...."

In In re Larson 144 USPQ 347 (CCPA 1965), the term "integral" did not define over a multi-piece structure secured as a single unit. More importantly, the court went further and stated, "we are inclined to agree with the solicitor that the use of a one-piece construction instead of the [multi-piece] structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice" (bracketed material added). The court cited In re Fridolph for support.

In re Fridolph 135 USPQ 319 (CCPA 1962) deals with submitted affidavits relating to this issue. The underlying issue in In re Fridolph was related to the end result of making a multi-piece structure into a one-piece structure. Generally, favorable patentable weight was accorded if the one-piece structure yielded results not expected from the modification of the two-piece structure into a single piece structure.

Therefore, it would have been obvious to one of ordinary skill in the art to use a one piece substrate that has thinner regions as "merely a matter of obvious engineering choice" as set forth in the above case law.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,323,832 Nishizawa et al. in view of U.S. Patent No. 5,821,688 Shanks et al.

14. Referring to claim 7, a flexible matrix array device, wherein the substrate comprises polymer material, (Shanks et al. Col. 5 Lines 40-44).

Nishizawa et al. teaches all of the claimed material in claim 7, but does not teach the substrate #101 to be made out of a polymer material. Shanks et al. teaches a flexible TFT matrix array with a substrate being made out of a polymer material, (Col. 5 Lines 40-44). It would be obvious to one skilled in the art to combine the teachings of Nishizawa et al. with the teachings of Shanks et al. because a polymer substrate would further allow the LCD matrix array to be more flexible.

15. Referring to claim 12, a flexible matrix array device, wherein the semiconductor devices comprises thin film transistors, (Shanks et al. Col. 5 Lines 15-16).

Nishizawa et al. teaches all of the claimed material in claim 12, but does not teach the transistors being made of thin film transistors. Shanks et al. teaches a flexible TFT matrix array, (Col. 5 Lines 15-16 & 40-44). It would be obvious to one skilled in the art to combine the teachings of Nishizawa et al. with the teachings of Shanks et al. because TFT matrix array would further allow the LCD matrix array to be more flexible.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ

May 21, 2003